

Fig. 1

Instruction
Trace Stream

⋮

30 — LDR[R1] -- miss

MOV

CMP

34 — LDR[R2] -- hit

34 — LDR[R3] -- miss

38 — ADD

MOV

SUB

⋮

Data
Trace Stream

32 — Data Place Holder Tag 1

36 — Data [R2]

40 — Data Place Holder Tag 2

42 — Late Data Tag 2 [R3]

44 — Late Data Tag 1 [R1]

Fig. 3

Instruction
Trace Stream
:
46 — LDR[R1] — miss
CMP
ADD
LDR[R2] — hit
50 — LDR[R3] — miss
SUB
MOV
36 — LDR[R4] — miss
CMP
MOV
:
:

Data
Trace Stream
:
48 — Data Placeholder Pending
—
—
Data [R2]
52 — Data Placeholder 1 pending
—
54 — Late Data [R1]
—
58 — Data Placeholder 1 pending
Late Data [R3]
Late Data [R4]
:

Fig. 4

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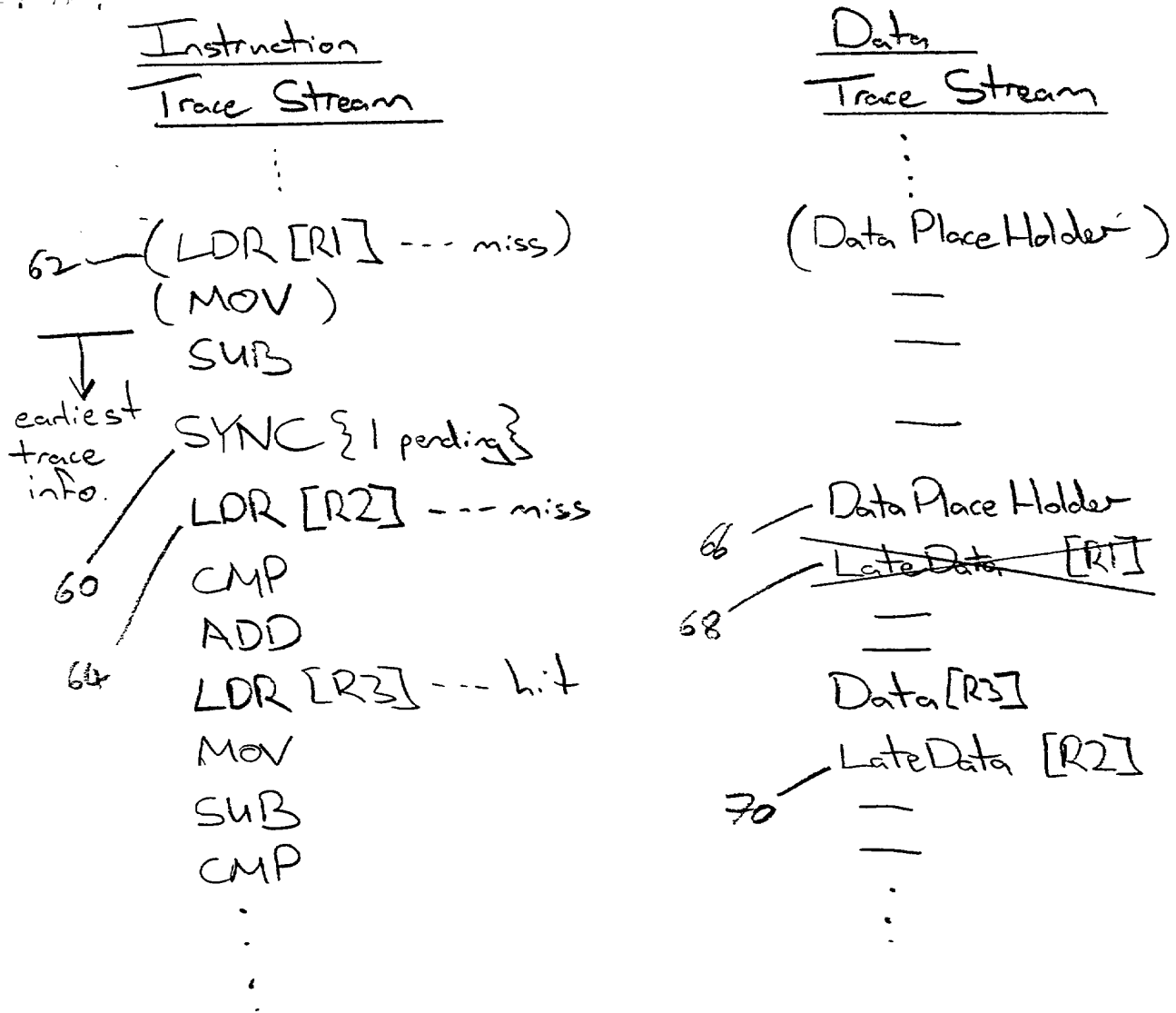


Fig. 5

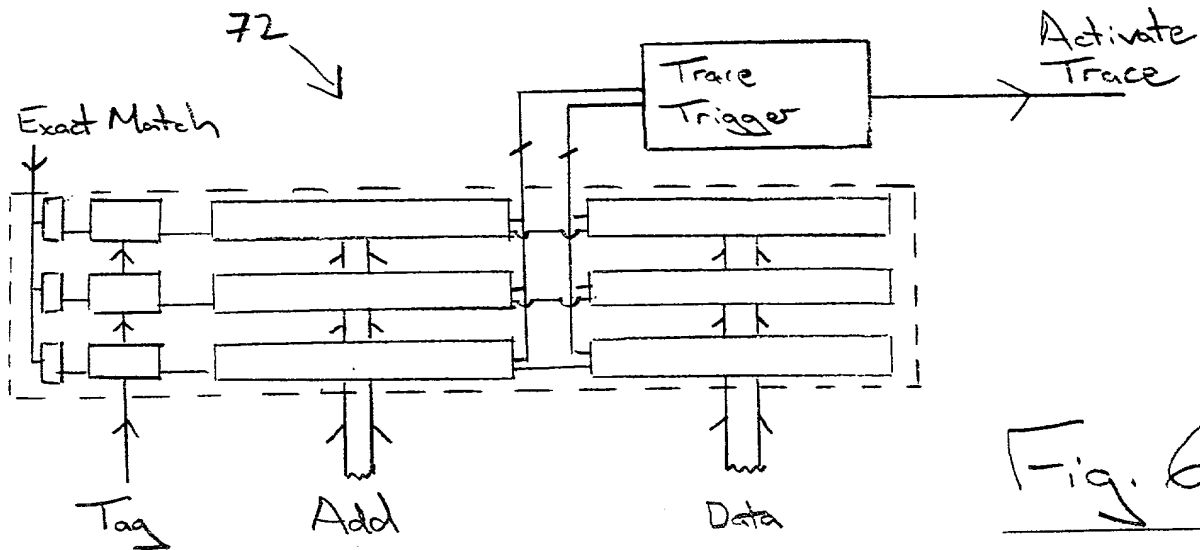


Fig. 6

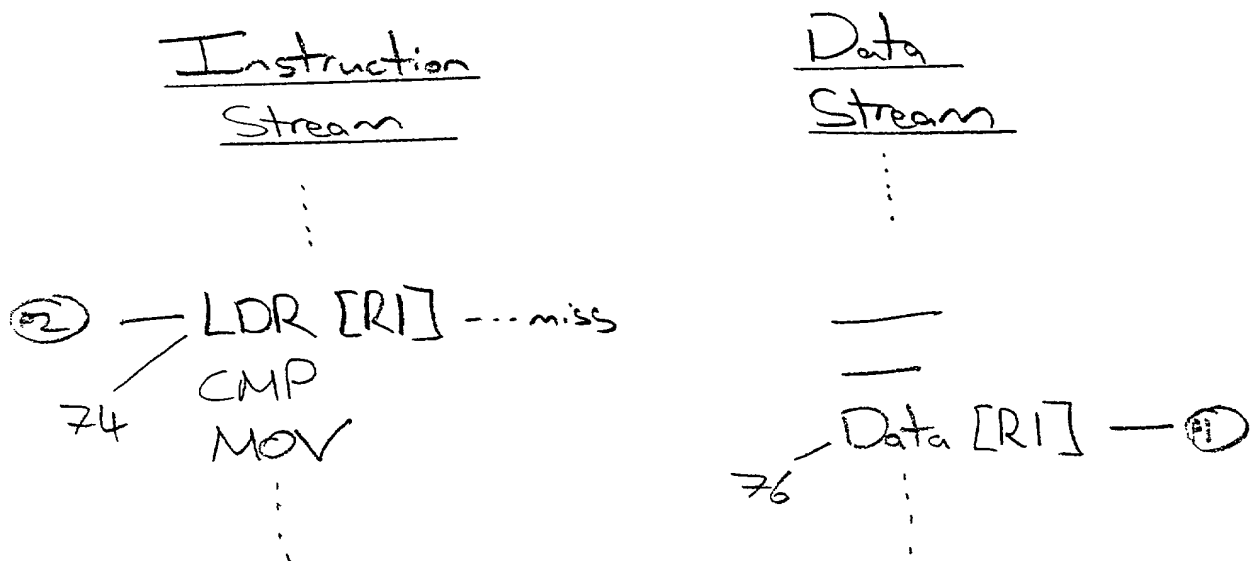
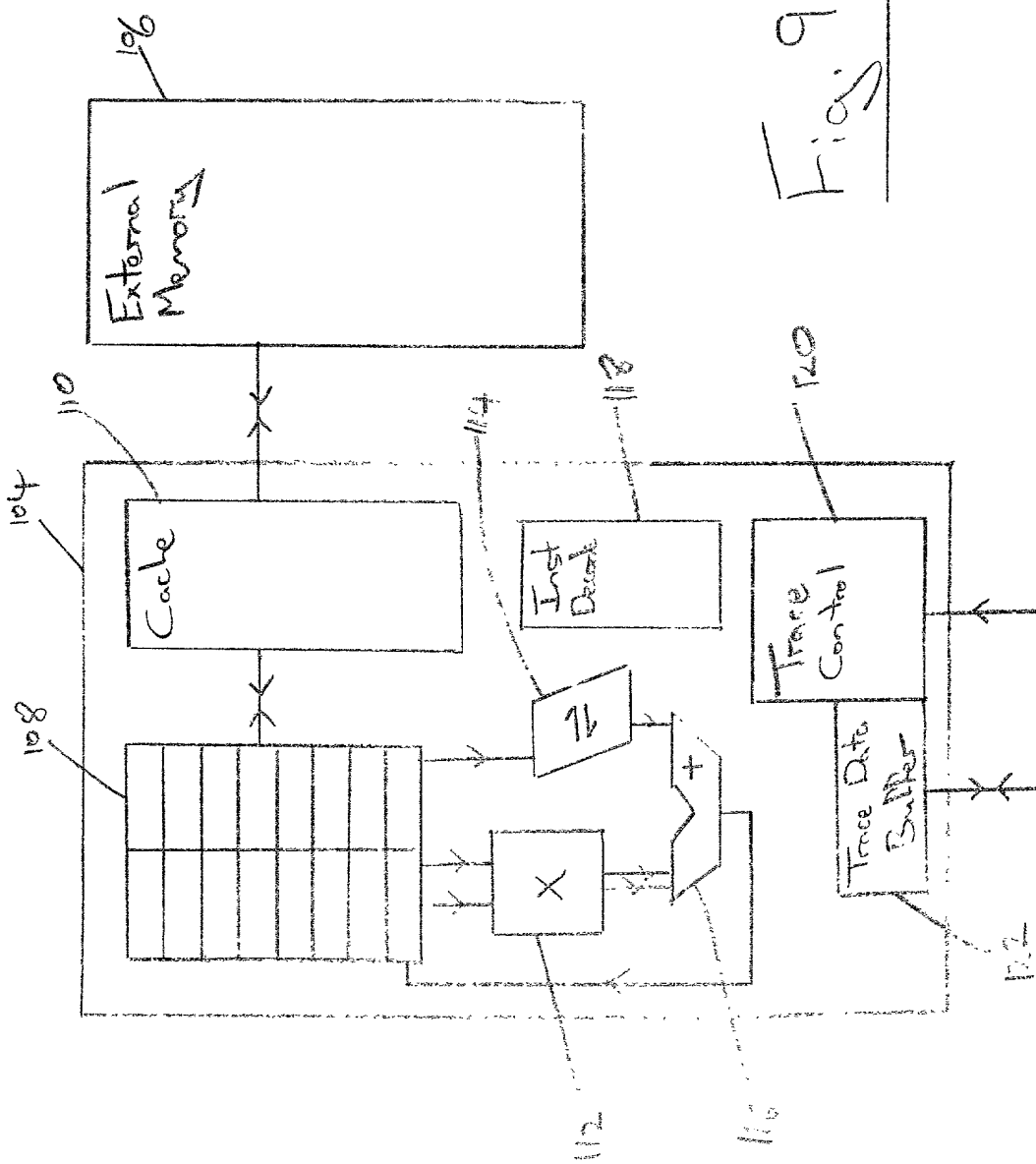


Fig. 7

Exact Match	Add Match	Data Match	Trace Activation Point
✓	✓	✓	①
✓	✓	X	none
X	✓	✓	②
X	✓	X	②

Fig. 8

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LSM $R_n[Add]$, RegList

16 bits

0000100010001011



R0	
R1	
R3	R11
R7	



$R0 \leftrightarrow [Add]$
 $R1 \leftrightarrow [Add + 4]$
 $R3 \leftrightarrow [Add + 8]$
 $R7 \leftrightarrow [Add + 12]$
 $R11 \leftrightarrow [Add + 16]$

{ 1000 1000 1000 1011 }
 { 1000 1000 1000 1011 }

Fig. 10

$$R0 \xleftrightarrow{DW_1} [Add]$$

$$R1 \xleftrightarrow{DW_2} [Add+4]$$

$$R2^{\#} \xleftrightarrow{DW_3^*} [Add+8]$$

$$R7 \xleftrightarrow{DW_4} [Add+12]$$

$$R11 \xleftrightarrow{DW_5} [Add+16]$$

Trace
Trisom

Trace
Trisom

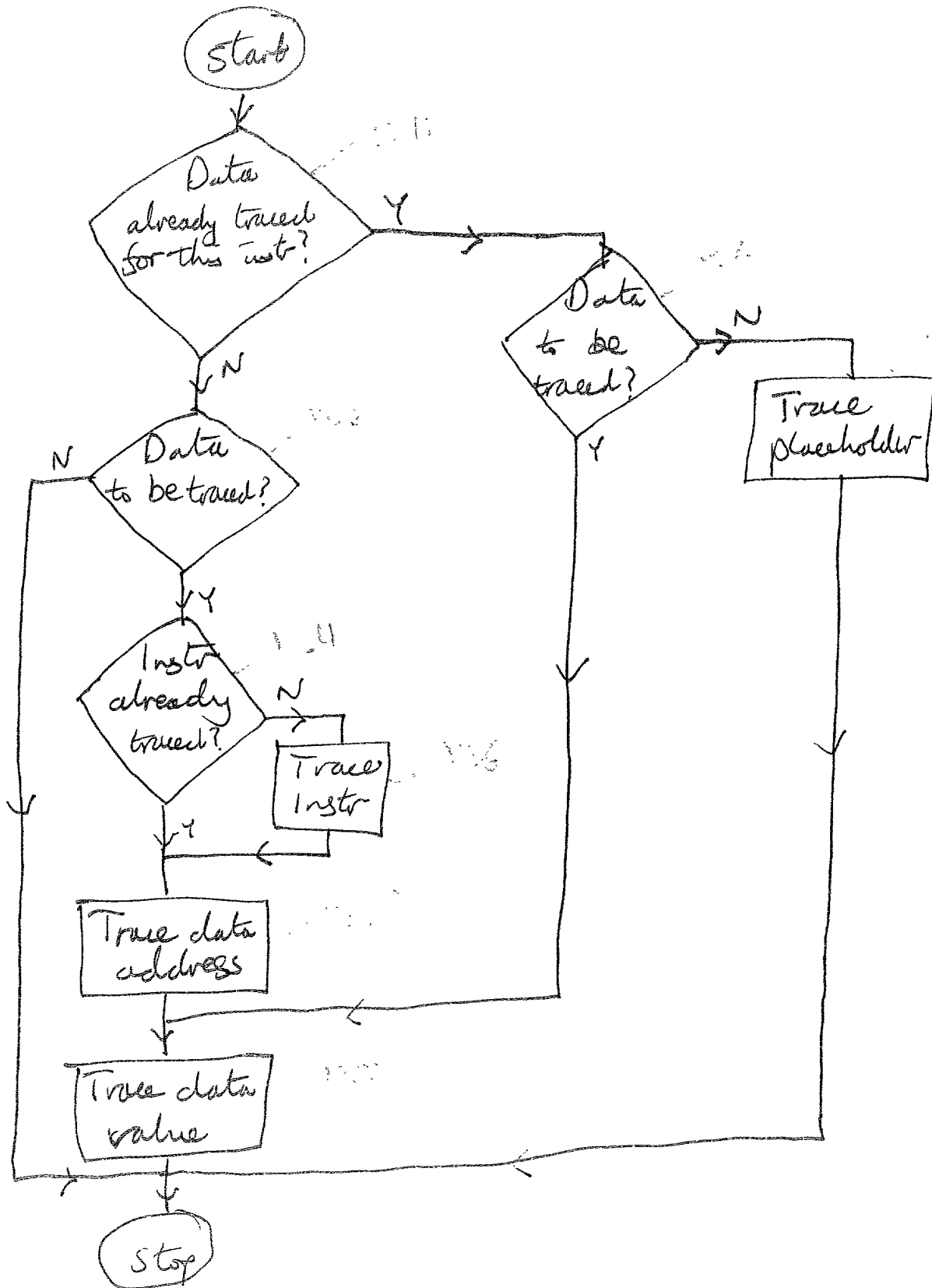


Trace Data Stream

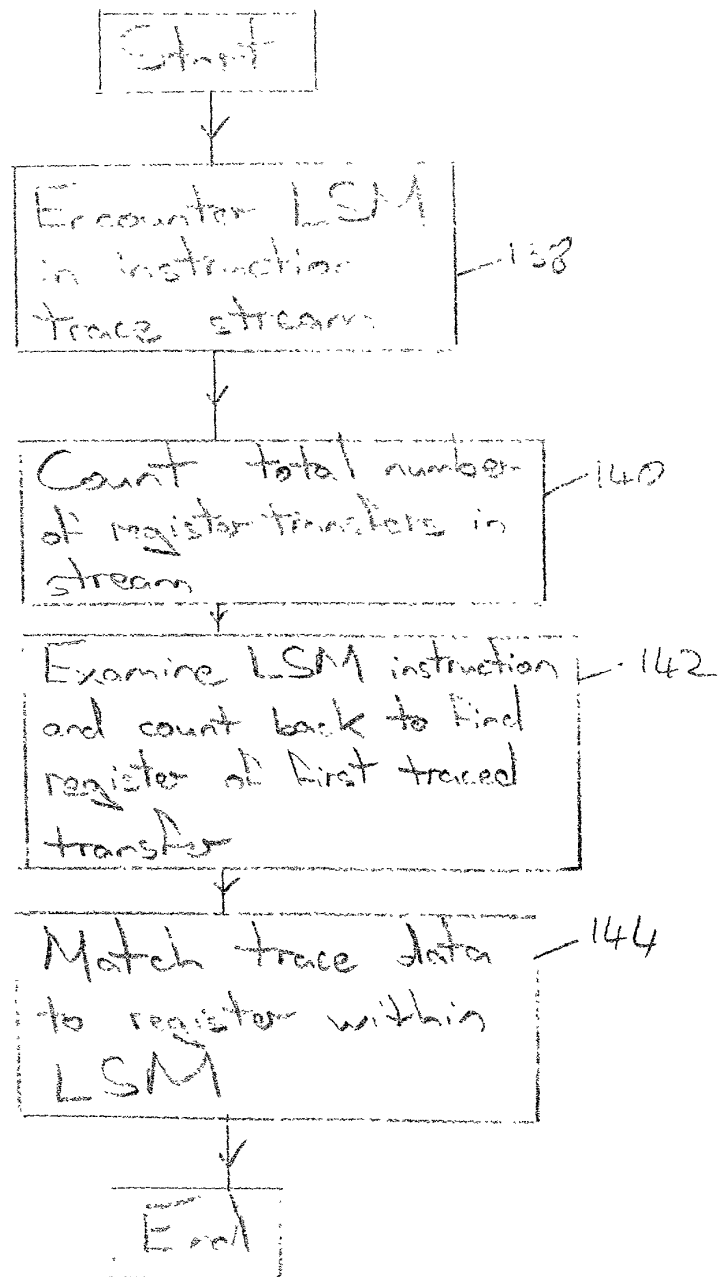
..., {L=1}, {Add+8}, {DW₃}, {Place Holder}, {Place Holder}, ...

Count back to R3

Fig. 1



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